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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/719,138 | 02/08/2001 | Hirokazu Fujino | 0020-4783P | 5320 |

2292 7590 06/20/2006

BIRCH STEWART KOLASCH & BIRCH
PO BOX 747
FALLS CHURCH, VA 22040-0747

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| EXAMINER |
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LEO, LEONARD R

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| ART UNIT | PAPER NUMBER |
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3753

DATE MAILED: 06/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|--------------------------------------|--------------------------------------|--|
| Office Action Summary | Application No. 09/719,138 | Applicant(s) FUJINO ET AL. | |
| | Examiner Leonard R. Leo | Art Unit 3753 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 September 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 3 and 6-12 is/are pending in the application.
- 4a) Of the above claim(s) 3 and 8 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 6, 7 and 9-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The amendment filed on September 23, 2005 has been entered. Claims 3 and 6-12 are pending, and claims 3 and 8 remain withdrawn.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 6-7 and 9-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 6 recites the limitation "said projection portions" in line 18. There is insufficient antecedent basis for this limitation in the claim.

Claim 7 recites the limitation "said projection portions" in line 18. There is insufficient antecedent basis for this limitation in the claim.

Claim 9 recites the limitation "said projection portions" in line 18. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ishikawa et al (US) in view of Shikazono et al.

Ishikawa et al (US) discloses all the claimed limitations except secondary grooves on the projected portions.

Shikazono et al discloses a heat-transfer pipe comprising a plurality of grooves 3 and projection portions 2 having a plurality of secondary grooves extending continuously from one side to the other side of the projection portions (Figure 17a) for the purpose of improving heat exchange (column 11, lines 23-31).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Ishikawa et al (US) secondary grooves for the purpose of improving heat exchange as recognized by Shikazono et al.

Claims 6-7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sasaki et al (10-300379) in view of Shikazono et al.

Sasaki et al (10-300379) (Figure 6b, 6d or 7b) discloses all the claimed limitations except secondary grooves on the projected portions.

Shikazono et al discloses a heat-transfer pipe comprising a plurality of grooves 3 and projection portions 2 having a plurality of secondary grooves extending continuously from one side to the other side of the projection portions (Figure 17a) for the purpose of improving heat exchange (column 11, lines 23-31).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Sasaki et al (10-300379) secondary grooves for the purpose of improving heat exchange as recognized by Shikazono et al.

Regarding claims 6-7, the similar structured device of the combination Sasaki et al (10-300379) and Shikazono et al is believed to be manufactured in a manner similar to applicants' claimed invention. Figure 8 of Sasaki et al (10-300379) is particularly pertinent.

Claims 6-7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kiyotani in view of Shikazono et al.

Kiyotani (Figure 5b) discloses all the claimed limitations except secondary grooves on the projected portions.

Shikazono et al discloses a heat-transfer pipe comprising a plurality of grooves 3 and projection portions 2 having a plurality of secondary grooves extending continuously from one side to the other side of the projection portions (Figure 17a) for the purpose of improving heat exchange (column 11, lines 23-31).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Kiyotani secondary grooves for the purpose of improving heat exchange as recognized by Shikazono et al.

Regarding claims 6-7, the similar structured device of the combination Kiyotani and Shikazono et al is believed to be manufactured in a manner similar to applicants' claimed invention. Figure 6 of Kiyotani is particularly pertinent.

Claims 9 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishikawa et al (US) in view of Schuez et al.

Ishikawa et al (US) discloses all the claimed limitations except secondary grooves on the projected portions.

Schuez et al discloses a heat-transfer pipe comprising a plurality of grooves 3 and projection portions 2 having a plurality of secondary grooves 5 (Figures 5 and 6a) for the purpose of improving heat exchange.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Ishikawa et al (US) secondary grooves for the purpose of improving heat exchange as recognized by Schuez et al.

Claims 6-7 and 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sasaki et al (10-300379) in view of Schuez et al.

Sasaki et al (10-300379) (Figure 6b, 6d or 7b) discloses all the claimed limitations except secondary grooves on the projected portions.

Schuez et al discloses a heat-transfer pipe comprising a plurality of grooves 3 and projection portions 2 having a plurality of secondary grooves 5 (Figures 5 and 6a) for the purpose of improving heat exchange.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Ishikawa et al (US) secondary grooves for the purpose of improving heat exchange as recognized by Schuez et al.

Regarding claims 6-7, the similar structured device of the combination Sasaki et al (10-300379) and Schuez et al is believed to be manufactured in a manner similar to applicants' claimed invention. Figure 8 of Sasaki et al (10-300379) is particularly pertinent.

Claims 6-7 and 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kiyotani in view of Schuez et al.

Kiyotani (Figure 5b) discloses all the claimed limitations except secondary grooves on the projected portions.

Schuez et al discloses a heat-transfer pipe comprising a plurality of grooves 3 and projection portions 2 having a plurality of secondary grooves 5 (Figures 5 and 6a) for the purpose of improving heat exchange.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Ishikawa et al (US) secondary grooves for the purpose of improving heat exchange as recognized by Schuez et al.

Regarding claims 6-7, the similar structured device of the combination Kiyotani and Schuez et al is believed to be manufactured in a manner similar to applicants' claimed invention. Figure 6 of Kiyotani is particularly pertinent.

Response to Arguments

The rejection of claims 6-7 and 9 under 35 U.S.C. 112, first paragraph, is withdrawn in view of the amendment.

Applicant's arguments have been fully considered but they are not persuasive.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

The device of the combination of Ishikawa et al and Shikazono et al teaches and fairly suggests a heat transfer pipe comprising a plurality of alternating rows of parallel grooves having a different width, and secondary grooves on projected portions (as taught by Shikazono et al).

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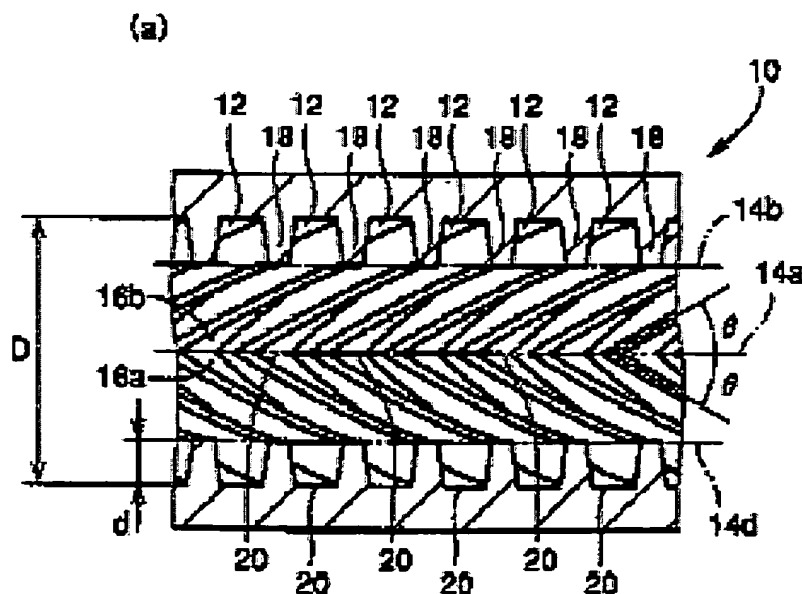
The secondary grooves of Shikazono et al have a “small width compared to the radial direction of the projection portions.” Applicant is reminded claim 9 is an apparatus claim.

The primary reference of Sasaki et al is similar to Ishikawa et al. However, Sasaki et al discloses the method of manufacturing the tube and meets the limitations of method claims 6-7.

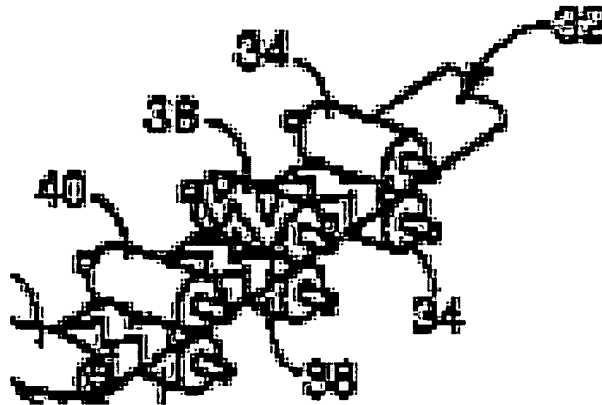
With respect to the primary references of Ishikawa et al and Sasaki et al, the Examiner believes the claims do not preclude the existence of an axial groove between the rows of parallel grooves. In fact, the axial groove is the point of contact or intersection between the grooves of adjacent rows.

With respect to Kiyotani, the reference is in the Japanese language. Without any offense, it is believed applicant is versed in the Japanese language, since this is the place of residence. As shown in Figure 2(a) below, primary grooves 12 and projected portion 18 “contact” the corresponding structure of the adjacent row of parallel grooves.

【図2】



According to the method of manufacture in a partial view of Figure 6 below, marking roll 36 has V-shaped structures to form a V-shaped groove of the flat plate-like heat transfer pipe material 32.



In view of the above drawings of Kiyotani, no further comment is deemed necessary at this time.

Conclusion

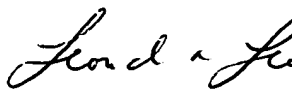
THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonard R. Leo whose telephone number is (571) 272-4916. The examiner can normally be reached on Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eric Keasel can be reached on (571) 272-4929. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


LEONARD R. LEO
PRIMARY EXAMINER
ART UNIT 3753

June 13, 2006